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## STREBLIDAE FROM YEMEN WITH DESCRIPTION OF ONE SUBSPECIES OF *ASCODIPTERON* (DIPTERA)

B. JOBLING, F.R.E.S.

WELLCOME LABORATORIES OF TROPICAL MEDICINE, LONDON

In 1951, the Director of the United States Naval Medical Research Unit No. 3, Cairo, Egypt, organized a Naval Medical Mission to the Yemen, and while there, the medical zoologist of the Mission, Mr. Harry Hoogstraal, made a collection of the ectoparasites of mammals. Among the specimens of this collection were 64 batflies (Streblidae), which he kindly submitted to me for study.

Until comparatively recent time the fauna of the Streblidae of Arabia was completely unknown. The first specimen was found in Aden, on a broad-eared bat. It was described as *Raymondia huberi setosa* Jobling (1930) and later elevated to specific rank (Jobling, 1939). Recently this species has been found on *Asellia tridens* (Geoffroy), at Jaffa, Palestine, by Theodor and Moscona (1954). I rather suspect that the type specimen of this species was collected from the same host. In the British Museum (Natural History) there is another specimen of the genus *Raymondia*, from Aden. Although it is very badly distorted by pressure of the cover slip, its more or less discernible characters indicate its affinity with *Raymondia seminuda* Jobling (1954). This species is common in the tropical parts of Africa, where its principal hosts are *Hipposideros caffer caffer* (Sundevall) and other subspecies. This bat was unknown from Arabia until a single specimen was discovered by the British Museum (Natural History) Expedition to southwest Arabia, in the western Aden (Hayman, 1937-38). Two other specimens have been found in Yemen, near San 'a (Sanborn and Hoogstraal, 1953). No Streblidae have been found on these three specimens of *Hipposideros c. caffer*, although in tropical Africa this bat is parasitized by seven species. This, however, does not exclude the presence of Streblidae on these

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bats in Arabia. It is more likely that the above-mentioned specimen of *Raymondia seminuda* was taken from this bat, because, as far as is known at present, none of the other species of bats that *seminuda* is known to parasitize has been found in Arabia.

Including the record from Yemen, the Streblidae of Arabia consist of three species and one subspecies. Except *Raymondia setosa*, of which the zoogeographical position is not clear, they all belong to the Ethiopian fauna.

### *Nycteribosca africana* (Walker)

*Specimens examined*.—Yemen: One specimen from *Rhinolophus clivosus acrotis* Heuglin, Ta'izz, altitude 4,100 ft., taken January 10, 1951 (field no. HH 6267); one specimen from the same host and locality, taken January 21, 1951 (field no. HH 6280-81); 28 specimens from *Rhinolophus blasii* Peters, Al 'Asr (3 miles west of San'a), altitude 7,200 ft., taken February 17, 1951 (field no. HH 6453-6551).

The distribution of this species extends from Cape of Good Hope to Sudan, and from British Somaliland to Sierra Leone, West Africa. As yet it has not been recorded from Abyssinia and Eritrea and has not been found in Lower Egypt, in spite of a very extensive collecting of these ectoparasites by Mr. Hoogstraal. Its record from *Rhinolophus blasii* is interesting, because this bat belongs to the fauna of the Mediterranean subregion of the Palaearctic and is parasitized by *Nycteribosca kollari* Frauenfeld, which does not occur in the Ethiopian region.

The taxonomically important characters of the specimens from Yemen and the different parts of Africa show some variation. These differences may seem significant, but they do not justify the separation of this species into different subspecies, for the examination of the material reveals that all these characters intergrade; for instance, the postvertex, the seventh sternite, the ninth + tenth sternite and the tenth tergite of the female, and the genitalia of the male, which are very important taxonomically, have the same structure in some specimens from Yemen as in the specimens from Kenya and South Africa.

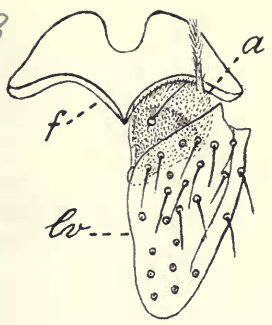
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FIG. 29. A, B, D-G, *Ascodipteron africanum rhinolophi*, new subspecies: A, antenna, frons, and lateroververtex; B, mesonotum; D, anterior parts of thorax; E-G, cerci. C, *Ascodipteron africanum africanum* Jobling, anterior part of thorax and gena.

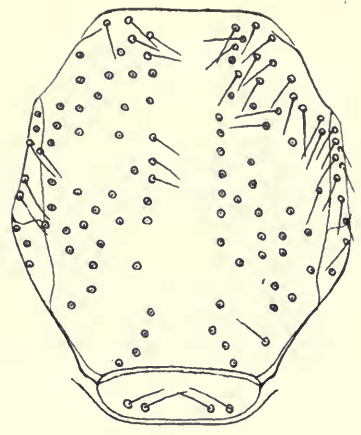
a, antenna; cxl, fore-coxa; f, frons; g, gena; lv, lateroververtex; mes, mesopleuron; st, sternopleuron.

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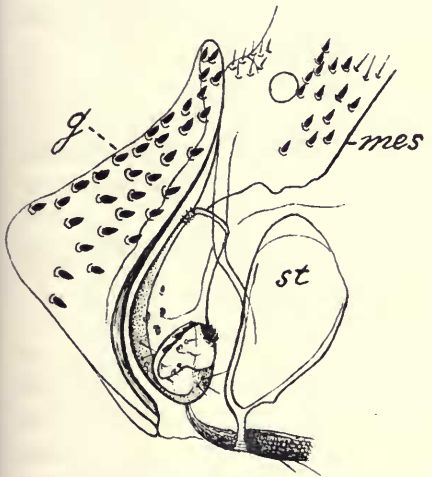
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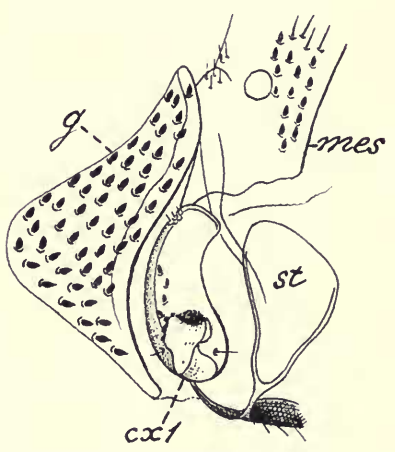
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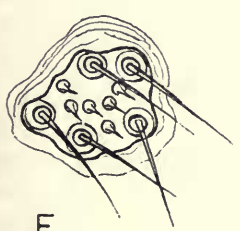
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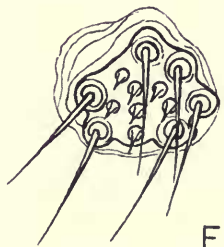
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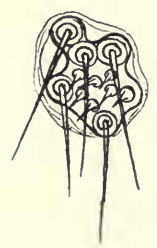
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E



F



G

It seems to me that the absence of distinct subspecific differentiation in this widely distributed species is correlated with the peculiar nature of its hosts, which in some respects differ from the other mammals.

*N. africana* has been found on the species of the three families of Chiroptera, but its principal hosts are the species (and the subspecies) of the genus *Rhinolophus*. Although the species of this genus occupy different geographical areas, they have a tendency to live in more or less the same environment, and I strongly suspect that the microclimatic conditions on their skin are also the same. Therefore, wherever *N. africana* lives, its individuals will be exposed to the same ecological and biological conditions. This may also explain the almost complete absence of host specificity in this species. It parasitizes seven species and two subspecies of the genus *Rhinolophus*, one species of the genus *Hipposideros*, and one species of the genus *Rousettus*. These genera belong to different suborders, the first two to the Microchiroptera and the third to the Macrochiroptera.

#### ***Ascodipteron africanum rhinolophi*, new subspecies**

In this paper I am separating *Ascodipteron africanum* Jobling (1939) into two subspecies, and in the following description the forms will be mentioned under the trinominal name.

The most obvious characters in which the two subspecies differ from each other are the structure and the chaetotaxy of their gena. In *A. africanum africanum* each gena is 3.2 times as high as long, with many peg-like setae in the upper half and a few setae in the upper part of the lower half (fig. 29, C,g), whereas in *A. africanum rhinolophi* the gena is 2.3 times as high as long and has many setae over almost its entire surface (fig. 29, D,g). However, the number and distribution of setae may vary; there may be a few more setae in a row near the antero-ventral margin in *A. africanum africanum*, and fewer setae in the postero-ventral part of *A. africanum rhinolophi*.

The theca of the labium, and the frons and antennae resemble those of *A. a. africanum*, and the laterovertices show considerable variation. The form of the prescutum also varies considerably in both subspecies, but in *A. africanum rhinolophi* its surface bears more setae in the lateral parts (fig. 29, B). The humeral callus, pteropleuron, and mesopleuron have no distinctive characters, and the chaetotaxy of the mesopleuron varies in both subspecies; the sternopleuron also varies in both subspecies, but in *A. africanum rhinolophi* it is slightly shorter and its postero-dorsal margin does not slope as much

as it does in *A. africanum africanum*. The fore-coxa is either curved (fig. 29, D, *cxl*) or has almost the same form as that of the other subspecies (fig. 29, C). The cerci vary as shown (fig. 29, E, F and G) and in some specimens resemble those of *A. africanum africanum*.

*Holotype*.—A female from Ta'izz, Yemen, altitude 4,100 feet. Collected at base of ear of *Rhinolophus clivosus acrotis* Heuglin (field no. HH 6204), January 12, 1951, by Harry Hoogstraal. In the collection of the United States National Museum.

*Paratypes*.—Seven females, same data as the holotype. Nineteen females, same locality and host (HH 6267, 6271, 6280–6286), collected January 10–21, 1951. Five females, same locality as the holotype, collected at base of ears of *Rhinolophus* sp. (HH 6216), January 13, 1951. Two females from San'a, Yemen, altitude 7,200 feet; collected from *Rhinolophus blasii* Peters, February 17, 1951. In the collections of Chicago Natural History Museum, the United States National Museum, and B. Jobling.

This subspecies parasitizes the three species of the genus *Rhinolophus*, while *Ascodipteron africanum africanum* parasitizes the species of the genus *Miniopterus*. *A. africanum rhinolophi* is also present in Africa. I have re-examined the two specimens from Kenya, which were described by me (Jobling, 1940) as *A. africanum* and have found that they belong to this subspecies. One of these specimens, the male, was taken from *Rhinolophus lobatus* Peters, and the other, the female, from *R. elocuens* Andersen.

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